

THE GERMAN COUNCIL OF SCIENCE AND HUMANITIES  
(WISSENSCHAFTSRAT) PROVIDES ADVICE TO THE GERMAN  
FEDERAL GOVERNMENT AND THE STATE (LÄNDER)  
GOVERNMENTS ON THE STRUCTURE AND DEVELOPMENT OF  
HIGHER EDUCATION AND RESEARCH.

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## New procedure for the evaluation of “Big Science projects”

The German Council of Science and Humanities prepared the investment decisions of the BMBF for a first roadmap for research infrastructures

Within less than a year the Council developed a procedure for a science-driven evaluation of research infrastructures and tested it on nine projects. Aim of the procedure is to establish a basis for research policy and fiscal decisions in the realm of research infrastructures. The new procedure shall contribute to a higher acceptance of the decisions and at the same time foster the German position in international projects.

In the light of the mere amount of the target investments, which already in the pilot phase reached from more than EUR 20 million up to several hundreds of million Euros, a systematic procedure for the preparation of political research decisions seems urgently necessary. That is why the Council appreciates the initiative of the Federal Ministry of Education and Research (BMBF) to establish a roadmap process as well as the invitation of other stakeholders of the German science system to take part in this initiative.

“This is an important step on the right track”, explains Wolfgang Marquardt, Chairman of the Council. Research infrastructures are becoming more and more important in the science system. In a lot of fields they have become indispensable for working on challenging questions. It would be impossible to explore the climate relevant changes in the Arctic and Antarctic Oceans without a big research vessel like the ice-breaker “Polarstern” with nine laboratories and more than 50 scientists on board. In many cases

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the use of research infrastructures facilitates the access to cutting-edge research. For instance the free-electron laser in Hamburg, which is under construction and is based on an accelerator with a 1.7 km long site, shall generate ultra-short X-ray flashes. For the first time the formation of molecules from single atoms could be “filmed” with it. Amongst others understanding this essential chemical process provides a basis for the synthesis of new medicine. Also in other fields, like social sciences or biomedical research, large research infrastructures have quickly gained in importance.

Not only has the scientific significance of research infrastructures risen, but also their organisational complexity and the amount of necessary resources for their implementation and operation. Against this background the Council developed a new science-driven procedure for the evaluation of research infrastructures at the request of the BMBF. First of all the procedure points out that the success of large research infrastructures is not only dependent on their scientific potential. That is why next to questions on the utilisation, e. g. access regulations, the feasibility, e. g. the governance of research infrastructures, or the competitive environment are also assessed. Secondly the new procedure distinguishes itself through a comparative approach: projects of all areas of science are systematically evaluated in the same way and the results are expressed in a standardised mode.

“It is our conviction that politics in Germany will come to informed investment decisions on basis of the results of this evaluation process”, comments the Chairman of the Council, Professor Wolfgang Marquardt, on the completion of the pilot phase. “Furthermore the process also showed how important it is to look at research infrastructures during all life cycle phases: beginning with the formulation of scientific and technical requirements to project engineering and construction up to the operation and decommissioning. Research infrastructures are an essential pillar for the efficiency and the international visibility of the German science system.”

**Note:** The “Report on the Science-driven Evaluation of Large Research Infrastructure Projects for the National Roadmap (Pilot Phase)” (Drs. 2841-13) will be published online as full text ([http://www.wissenschaftsrat.de/download/archiv/2841-13\\_engl.pdf](http://www.wissenschaftsrat.de/download/archiv/2841-13_engl.pdf)), but it can also be ordered via e-mail at the Head Office of the Council ([post@wissenschaftsrat.de](mailto:post@wissenschaftsrat.de)).